could probably justify a decision to meet only one set of the competing needs (i.e., using curved buttons in all of its products), whereas, in contrast, under a product-line approach to compliance, it would be more difficult for a manufacturer to justify a decision not to make any effort to accommodate people who need big buttons in at least one of the products in the line.

The FCC should adopt a balanced approach not only among differing needs for Access but also between short-term access and innovation.

D. ADA And FCC Precedent Support An Up Front Policy Of Product Line Compliance.

Finally, as TIA and several comments submitted on behalf of manufacturers have pointed out, there is ample support in both ADA and FCC precedent to support adoption of a product-line approach to compliance "up front," rather than simply as a defense to complaints. [27] In adopting regulations related to public accommodations for one particular kind of functional limitation — people who use wheelchairs — the Department of Justice ("DOJ") did not require that every seat in a public theater or stadium, or every hotel room, be accessible. [28] Rather, DOJ

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[27] See, e.g., Motorola Comments at 21-24; CTIA Comments at 12; Ericsson Comments at 2.

[28] Under the guidelines promulgated by the Access Board and adopted by the Department of Justice ("DOJ"), theater and stadium owners are not required to make every single seat wheelchair accessible. Department of Justice Standards for Accessible Design ("JDSAD"), 28 C.F.R., Part 36, App. A, § 4.33.3; 28 C.F.R. § 36.308, DOJ Preamble to Regulation on Non-Discrimination on the Basis of Disability ("DOJ Preamble"), 28 C.F.R. Part 36, App. B (commenting on § 36.308). Instead, the ADA has been interpreted to require that: (1) a certain percentage of accessible seats be provided; (2) the accessible seats must be integrated into the seats available to the general public; and (3) the accessible seating must be dispersed throughout the stadium or arena so that disabled patrons are offered the same general range of choices, including sight lines and price, that are available to the general public. *Id.*; *Paralyzed Veterans of America v. Ellerbe Beckett Architects & Engineers, P.C.*, 950 F. Supp. 393, 398-405 (D. D.C. 1996) (discussing these requirements and applying them to the MCI arena in the District of Columbia), *aff'd*, 117 F.3d 579 (D. C. Cir. 1997), *cert. denied*, 118 S. Ct. 1184 (1998).

examined the competing interests of cost and access and set, as a matter of policy, the number of representative wheelchair accessible seats or rooms required based upon the size of the public accommodation.

Similarly, the FCC in the telecommunications manufacturing context should set a policy that strikes a balance not only among the different access requirements that need to be accommodated within the "readily achievable" standard, but also a balance between accessibility in the short-term and innovation. Innovation is the key to increased access in the long term. As in the Hearing Aid Compatibility ("HAC") proceeding, the FCC should avoid an overly rigid regulatory regime.[29] The FCC should instead adopt a product-line approach to compliance which capitalizes and encourages the trend towards product differentiation in producing CPE products that are increasingly customized and personal to the user, including persons with disabilities.[30]

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[29] See *Access to Telecommunications Equipment and Services by Persons With Disabilities (Hearing Aid Compatibility)*, CC Docket No. 87-124, Final Rule , 61 Fed. Reg. 42181 (1996) (requiring most workplace telephones to be hearing aid compatible by January 1, 2000, but declining to require testing or retrofitting of existing telephones, instead permitting a presumption of compliance).

[30] In this respect, the trend towards CPE that is increasingly personal to the user's individual preferences and needs is much like the "plug and play" paradigm described by the Information Technology Industry Council ("ITI"). See ITI Comments at 4-7. Like ITI, TIA believes that the FCC should encourage, rather than discourage this trend towards product differentiation as the most effective strategy for providing access for persons with a range of disabilities, if "readily achievable."

IV. DEFINITIONS.

A. As Many Commentors Agreed, The Proposed Definition Of Accessibility In The Context Of Section 255 Should Be Revised And Clarified.

1. TIA agrees with disability advocates that the concept of accessibility includes the ability to use product information and customer support services.

In the NPRM, the FCC proposes to collapse the definitions of "accessible" and "usable."[31] In the guidelines, the Access Board had given the term "usable" a distinct definition, to refer to the accessibility of product information and customer support.[32] In addition, the guidelines contained express obligations to provide "usability," such as providing product information in alternative formats and maintaining accessible customer support services and call centers.[33] The status of the Access Board's "usability" requirements under the FCC's NPRM is unclear. While the guideline including these requirements is incorporated by reference into the FCC's proposed definition of "accessible,"[34] the NPRM elsewhere suggests that these items are not mandatory by indicating that these activities will be considered in the context of a complaint as evidence of a manufacturer's good faith.[35]

TIA believes that CPE cannot legitimately be considered "accessible" unless product information and customer support is provided in a manner that is accessible to persons

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[31] NPRM ¶ 73.

[32] 36 C.F.R. § 1193.3.

[33] 36 C.F.R. § 1193.33(a).

[34] NPRM ¶¶ 72, 73.

[35] See NPRM ¶ 165.

with disabilities. For this reason, TIA agreed to inclusion of these requirements in the TAAC Final Report.[36] Consequently, TIA urges the FCC to clarify its statements in the NPRM to reflect that accessible product information and customer support are required by Section 255, to the extent "readily achievable".[37]

2. The FCC should adopt the Section 255 definition of "accessible" proposed by TIA.

The FCC should revise its proposed Section 255 definition of "accessible" equipment and CPE to conform to the definition proposed by TIA in its initial comments for three reasons. First, as a matter of law, TIA's definition is consistent with ADA precedent. Second, TIA's definition is preferable to the FCC's proposed definition as a matter of policy, because TIA's definition recognizes that manufacturers need to exercise discretion in choosing which features to incorporate since it is not "readily achievable" for a single product to meet the needs of every disability. Consequently, TIA's definition avoids the potentially unproductive requirements that could result from literal application of the FCC's proposed definition, minimizes compliance costs that produce no gains in access,[38] and encourages manufacturers to provide specific information about access features included in products so that persons with disabilities can identify the products that meet their access needs.

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[36] TAAC Final Report § 4.6.

[37] From TIA's perspective, it is irrelevant whether the FCC accomplishes this clarification as part of the definition of "accessible," or by adhering to the Access Board's approach of using a separate term such as "usability" to refer to these requirements.

[38] See SPR Study, TIA Comments, App. A.

a. To be consistent with ADA precedent, the FCC must adopt a definition of "accessible" for Section 255 that recognizes the cumulative cost, complexity, and impact on fundamental product characteristics of multiple access features.

As TIA pointed out in its initial comments, the FCC's proposed definition of "accessible" for Section 255 is inconsistent with ADA precedent because it requires an independent "readily achievable" assessment for each of the 18 items on the "accessible" checklist. Consideration of cumulative cost, consistent with ADA precedent, would permit the cumulative sum of the readily achievable assessment for all of the 18 checklist items to be considered. The proposed definition in contrast precludes consideration of the cumulative costs, complexity, and impacts on fundamental product characteristics that would be involved in incorporating multiple access features to accommodate multiple functional limitations in a single product. As proposed by the FCC and the Access Board, compliance cannot include the sum of the parts for a product. ADA precedent requires that the readily achievable cost be based on the entire product, e.g., the sum of the parts.

The proposed definition of "accessible" is also directly at odds with ADA precedent, where DOJ has recognized the cumulative cost, for example of barrier removal, as a legitimate consideration in determining what additional efforts are "readily achievable" and therefore required.[39]

[39] DOJ Preamble, 28 C.F.R. Part 36, App. B (commenting on § 36.104) (indicating that it is "appropriate to consider the cost of other barrier removal actions as one factor in determining whether a measure is readily achievable").

Moreover, the fragmented assessment of what is "readily achievable" under the FCC's proposed definition is inconsistent with the factors of technical feasibility, practicality and marketability that the FCC proposes to consider in determining what is "readily achievable." The difficulty, expense, and impact on product characteristics and marketability of access features cannot be assessed in a vacuum, but only in the context of an actual product destined for sale in the marketplace.

Therefore, to ensure that the requirements imposed by Section 255 stay within the parameters of the "readily achievable" standard, the FCC must, at a minimum, revise the definition of "accessible" to remove the requirement for an independent "readily achievable" assessment for each functional limitation on the checklist and to permit consideration of cumulative costs, complexity, and impacts to products.

b. TIA's proposed definition of "accessible" is preferable as a policy matter because it encourages manufacturers to provide information that enables persons with disabilities to purchase products that meet their needs and it endorses the recognized need for manufacturers to exercise discretion in including access features within product lines.

As a matter of policy, the FCC should adopt a definition of "accessible" that endorses manufacturers' discretion in incorporating access features because the exercise of such discretion is unavoidable. In spite of the FCC's recognition that manufacturers "must decide what features to include and what features to omit,"[40] the FCC proposes to adopt the Access Board's definition of "accessible," which effectively requires manufacturers to either: (a) make

[40] NPRM ¶ 170 (emphasis added).

each product accessible to every functional limitation; or (b) document the inevitable determination of why it was not "readily achievable" to provide universal access in each product.[41] TIA's definition, which would require manufacturers to achieve one or more of the 18 accessibility criteria, if readily achievable,[42] but would not make each of the 18 criteria mandatory and therefore the basis for a complaint, recognizes and endorses manufacturers' exercise of discretion. Under this approach, consumers could expect to see in each manufacturers' product line a feature or features from the checklist such that all 18 criteria are represented, to the extent "readily achievable."

TIA recognizes that Section 255 is the law and that it obligates manufacturers to incur compliance costs. TIA objects, however, to compliance costs that are not likely to result in tangible gains in accessibility of products available to persons with disabilities in the marketplace.[43] Moreover, by amending the proposed definition to relax the mandatory nature of the 18 access criteria, the FCC will minimize the compliance costs of Section 255. By recognizing manufacturers' discretion to choose among the 18 accessibility criteria, the FCC will

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[41] As pointed out in the discussion of product line, supra, application of the 18 accessibility criteria on a product-line basis would not only reduce the documentation requirements implicitly contained in the 18 point access checklist, but would also promote more meaningful levels of access for a more broad range of disabilities.

[42] TIA's proposed definition would not permit a manufacturer to achieve only one item on the checklist for compliance; to the extent that it is "readily achievable" to do more, the manufacturer would be required to do so. As provided by Section 255, what is "readily achievable" would remain the standard for determining what is required.

[43] See TAAC Final Report § 5.3 ("There will be cases where manufacturers may not be able to achieve the creation of a single product that addresses all or some combinations of disabilities without sacrificing product usability . . . [T]here will be cases where a company will have to use discretion in choosing among accessibility features.").

discourage manufacturers from adopting an approach to access features that result in superficial access enhancements for as many disabilities as possible, or to "paper" decisions why certain features were not "readily achievable."[44]

Furthermore, TIA's proposed definition of "accessible," by endorsing manufacturer discretion within product lines,[45] avoids some of the non-productive and arguably absurd requirements that could be imposed under literal application of the FCC's proposed definition. The FCC's proposed definition does not permit any coordinated consideration of the accessibility of product inputs, outputs, control, and mechanical functions for a given disability. Instead, the FCC's proposed definition requires manufacturers to assess whether it is readily achievable to make product inputs accessible independent of any consideration of whether it is "readily achievable" to make the outputs of the same product accessible to the same functional limitation. Consequently, the FCC's proposed definition could impose nonproductive requirements to make product inputs, such as a keypad, accessible to a person who is visually impaired, even though it was not readily achievable to make the product output, such as a visual display, accessible. TIA's definition would avoid such nonproductive results by giving manufacturers discretion to focus their efforts on providing products that are accessible overall to particular functional limitations.

Finally, TIA's proposed definition of "accessible," which focuses on the features included in products rather than an abstract legal notion of "accessibility," will encourage

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[44] See SPR Study, TIA Comments, App. A (criticizing documentation costs associated with Access Board's proposed guidelines).

[45] TAAC Final Report § 5.3.

manufacturers to provide information about specific features that promote access included in products. This information will dramatically increase the ability of persons with disabilities to purchase a product that meets their needs. TIA's proposed definition, which recognizes manufacturers' discretion within product lines and thereby insulates them from some risk of complaints, focuses on specific access features such as font size or backlighting, which manufacturers can represent that they have provided without fear of generating a complaint. This is the better approach to increase products with features which promote access in the marketplace, facilitate persons with disabilities in purchasing products that meet their unique access needs, and, in the long run, result in a decrease of complaints because there will be fewer misunderstandings about product features.

3. TIA supports the FCC's tentative conclusion that the prohibition against reductions in accessibility should not operate to preclude legitimate trade-offs as products evolve or to impede technological innovation.

In the NPRM, the FCC tentatively concludes that the general principle against reductions in accessibility reflected in the Access Board's guidelines "should not operate in such a way as to prevent legitimate feature trade-offs as products evolve, nor should it stand in the way of technological advances."[46] TIA agrees with the FCC's tentative conclusion and urges the FCC to revise its proposal to adopt the Access Board's guideline § 1193.39, which the FCC proposes to adopt as part of its definition of "accessible." to indicate that this prohibition does not apply when either of these conditions is met.

[46] NPRM ¶ 114.

Some commentors expressed concern that the FCC's interpretation of the guideline prohibiting reduced accessibility could operate to foreclose access to new technologies by persons with disabilities.[47] TIA members understand this concern; however, it is misplaced. Development of a new technology does not absolve manufacturers of all obligations to provide access. Manufacturers remain subject to the obligation to do what is "readily achievable" to provide access for old and new technologies alike. Therefore, new technologies must include features to promote access to the extent "readily achievable" when first introduced, as well as thereafter, when new products and services are introduced.

Admittedly, with some new technology there may be an adjustment period after the new technology is developed during which access solutions for the new technology will need to be developed or improved. During such an adjustment period, however, older technologies overlap and will remain accessible to the extent readily achievable. Digital wireless telephony and hearing aid compatibility provide a good example. Manufacturers of CPE and hearing aids are still working on a technical solution to the access problem raised by this new technology. The dissemination of this new technology, however, has been gradual. Meanwhile, persons with hearing aids have access to HAC analog cellular phones that are able to access the analog systems that remain in service throughout the country. And, as displayed at the Self Help for Hard of Hearing People convention in Boston in June, several manufacturers have plans to release a new product that increases the compatibility of hearing aids and digital wireless phones. Ultimately, more technical access solutions should be found, and persons with disabilities will be able to reap the benefits of a new (and in the interim, improved) digital technology. The

[47] See, e.g., NAD Comments at 26-27; SHHH Comments at 16.

introduction of new technology should not be delayed because accessibility may not be "readily achievable" at the outset.

4. Employee training should be left to manufacturers' discretion.

For the following reasons, TIA opposes any reference to employee training as part of the definition of "accessible."[48] As currently drafted, the FCC's proposed definition does contain a provision that appears to require that manufacturers **consider** addressing access issues when the manufacturer provides employee training.[49] This language should be clarified by deleting any references to employee training in the a definition of "accessible" even on an advisory basis.

Section 255 applies to the design, development, and fabrication of CPE; it does not require training. Many of TIA's member companies will elect to train their employees with respect to access issues. A manufacturer's compliance with Section 255, however should be assessed based upon its outputs – its success or lack of success in increasing accessibility. If a

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[48] Manufacturers agreed to include a purely advisory provision related to training as part of the give-and-take negotiation process that resulted in the TAAC Final Report. TAAC Final Report § 4.9 ("Manufacturers should also provide employees . . . with periodic training regarding the requirements of Section 255"). The Access Board disregarded the TAAC language and in its guidelines, adopted what could be construed as a mandatory requirement that where training is conducted, manufacturers must consider including access issues as a component of that training. 36 C.F.R. § 1193.33(c) ("Where manufacturers provide employee training, they shall ensure it is appropriate to an employee's function. In developing or incorporating existing training programs, consideration shall be given to the following [access-related] factors...").

[49] NPRM ¶ 73 (implicitly incorporating § 1193.33(c) by reference). Given the apparently mandatory language of this guideline, it is unclear whether a manufacturer would need to document its "consideration" of access training or would be subject to a complaint for its failure to engage in such consideration. Such inquiries and/or complaint clearly fall outside the range of activity – design, development, and fabrication – that Section 255 was intended to regulate.

manufacturer can increase accessibility without providing training to any or all of its employees, it should be permitted to do so. The FCC should allow manufacturers to implement Section 255 as effectively and efficiently as possible within their own companies.

Any training efforts undertaken by a manufacturer could appropriately be considered as part of a "good faith" defense to a complaint.[50]

B. Compatibility.

1. The FCC should adopt an approach to Section 255 compatibility that defines the universe of SCPE with which manufacturers have an obligation to be compatible and permits the FCC to achieve policy objectives such as compliance with industry standards.

TIA believes that the compatibility obligation of Section 255 should be implemented by the FCC in a way that clearly defines manufacturers' obligations and permits the FCC to achieve overarching policy goals related to accessibility. Under Section 255, manufacturers have an obligation when access is not readily achievable, to provide equipment and CPE that is compatible with peripheral devices and SCPE "commonly used" by persons with disabilities, if "readily achievable." In the NPRM, the FCC proposed an overarching definition of "commonly used" to mean "affordable and widely available," and a rebuttable presumption that SCPE qualifies as "commonly used" triggering compatibility requirements if the SCPE is distributed by a statewide equipment program for persons with disabilities.[51] Like many other

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[50] See NPRM ¶ 165.

[51] NPRM ¶ 90.

commentors,[52] TIA is concerned about this proposed approach, particularly the rebuttable presumption.

In TIA's view, the FCC should implement the compatibility requirement in a way that provides manufacturers with clear notice of the SCPE for which compatibility must be provided, "if readily achievable," and permits the FCC to implement policies that will, in the long run, increase accessibility. This approach is preferable to the proposed rebuttable presumption, which does not satisfy either of these objectives and therefore should be abandoned. Instead, the FCC should establish a definition of "commonly used" and a process for "listing" the SCPE that satisfies this definition through a process of notice and comment involving all interested parties.[53]

While TIA recognizes that this "list" approach will involve substantial monitoring and participation from manufacturers, TIA believes that this effort would be well spent if the FCC were to set criteria for inclusion on the list that included compliance with industry interoperability standards and the use of a standard connector. By establishing these criteria as

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[52] See, e.g. Missouri Assistive Technology Council Project ("MATP") Comments at 3; NCD Comments at 18; TDI Comments at 13-16.

[53] Several disability advocates endorsed such a list, on either a mandatory or advisory basis. Many of these same commentors suggested that such a list be compiled with the input of disability groups, SCPE manufacturers, and outside "experts" such as AAES. See, e.g. NAD Comments at 9; SHHH Comments at 12; TDI Comments at 13-16. TIA supports any process that would define the universe of SCPE for which manufacturers are responsible to provide readily achievable compatibility with the involvement of all appropriate parties, including manufacturers of CPE and telecommunications equipment. As set out in more detail below, manufacturers have valuable expertise related to interoperability and connection requirements to bring to the table in compiling such a list. In addition, TIA envisions a process that includes oversight by the FCC (with input from the Access Board), as the ultimate authority for enforcing Section 255, not exclusive responsibility for the Access Board to maintain such a list as some disability advocates proposed.

prerequisites for inclusion on the compatibility list, the FCC would promote increased accessibility and compatibility in the long run. Without a list, manufacturers will spend significant resources and waste repeated effort in trying to identify SCPE that is "commonly used." Without standard interfaces between CPE and SCPE, manufacturers, will find it very difficult to accommodate in every product the dozens of connectors used by SCPE. As a practical matter, manufacturers will need to exercise discretion to provide compatibility for some kinds of SCPE but not others. Requiring use of a standard connector as a prerequisite for triggering the compatibility obligation will reduce the technical difficulties, costs, and alterations to fundamental product characteristics entailed in providing compatibility, thereby making it more likely that such compatibility will be "readily achievable" and that more products will be "compatible" for consumers with disabilities.

Furthermore, a list approach is consistent with the need for the FCC to adopt policies that encourage, rather than hinder new technologies. As TIA pointed out in its initial comments, at some point in the future, alternative technologies may perform many of the same functions as TTYs, making it appropriate to phase-out these outdated technologies in favor of new ones which will provide people with disabilities with greater access to the mainstream of society. A list approach to compatibility, which contemplates ongoing FCC involvement, would provide a vehicle for implementing a forward-looking approach to compatibility that will increase access in the long run.

2. The compatibility requirement demonstrates the appropriate role for standards developed by existing standards-setting bodies, with consumer participation, in the future of Section 255 implementation.

Technical interface standards are essential to efficient implementation of the compatibility requirements of Section 255. Standards have been a part of the telecommunications industry for many years, and it is reasonable to expect that they will likewise play a part within the context of Section 255. It is important to understand that adoption of standards involves important trade-offs, for while they ensure consistency and uniformity of performance, they can also inhibit innovation. Therefore, if standards are misapplied in the Section 255 context, they could hinder or block development of creative solutions to access.

Standards play an important role in today's telecommunications systems. Signaling protocols, for instance, must be standardized so that the CPE manufactured by different companies will operate on infrastructure manufactured by yet another company. Without such standards, the large variety of CPE offered by multiple manufacturers would not be possible.

At this stage in the development of Section 255, it is too early to understand fully where standards would make the most sense. At a minimum, there will be a need for technical interface standards. For instance, manufacturers will need standards specifying the technical interface between CPE and peripherals/SCPE in order to fulfill the compatibility requirements of Section 255, and it is possible that interface standards are all that will be required. There may also be performance based standards, e.g. the audio output levels for a piece of CPE to be considered accessible to those individuals with hearing disabilities. These are all positive examples of contributions that standards can bring to the goal of achieving greater access to telecommunications services by persons with disabilities.

Of equal importance as where standards should be applied, is the issue of who should define and develop standards. In the case of Section 255, the standards process should be driven by the telecommunications industry with the participation and collaboration of advocates for persons with disabilities as well as representatives of the peripheral and SCPE manufacturers, as appropriate. Such a collaborative process will insure that the needs of all parties are included in the setting of standards; likewise, without this collaboration, problems will likely result.[54] Industry has been developing such standards for many decades in voluntary, consensus standards organizations, including TIA and American National Standards Institute ("ANSI")'s Committee T1. Also, in keeping with the directives of the National Technology Transfer and Advancement Act of 1996,[55] the proposed accessibility and compatibility guidelines should make use of

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[54] For example, the Access Board guideline Section 1193.43(e) essentially establishes a de facto performance "standard" for the volume control levels in consumer premises equipment. As was pointed out in the comments submitted by Siemens Business Communication Systems, Inc. ("Siemens"):

> "This Access Board guideline for volume control with a minimum gain of 20 dB is based on faulty technical premises. The Access Board accepted, without adequate analysis, information submitted to it based upon a very narrow product sampling of three telephone handsets. The derivation of general conclusions for all telecommunications products from a test of only three handsets is exceedingly perilous."
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> In the appendix to their comments, Siemens elaborates in significant detail, the problems and conflicts with other requirements created by the Access Board's attempts to specify performance parameters which they are not qualified to establish.

Siemens Comments at 14-15.

[55] Pub. L. 104-113 § 12(3), 110 Stat. 775, 782 (1996).

technical specifications and practices established by such private, voluntary standards setting bodies wherever possible.

The telecommunications industry is involved in a number of these private, voluntary standards setting organizations (SDOs), which could serve the needs of Section 255 well. ANSI has established uniform procedures for appropriately conducting the establishment of voluntary based standards that includes all consideration of the views of all parties affected by a standard. Therefore, the use of ANSI accredited SDOs to develop technical interface standards should be given consideration. It should also be noted that, because the existing standards processes are lengthy, in some cases, standards are set by industry consortium. However standards are set for Section 255, the FCC should be sensitive to the fact the telecommunications industry has years of experience in the standards arena. TIA, an ANSI accredited SDO, itself, stands ready to guide and assist the FCC in this area.[56]

[56] As an ANSI accredited standards body, TIA has been active in standards activities related to issues concerning individuals with disabilities for a number of years. The standard for Hearing Aid Compatibitiliy (HAC) was created by TIA and HIA, and adopted by the FCC well before the release of Section 255. TIA also had a group, TR30, which actively worked on the V.18 (import compatibility for TTY's) modem standard which was later approved by the International Telecommunications Union (ITU). In all of these activities, TIA sought consumer input from representatives of persons with disabilities. TIA also participates in the ANSI Consumer Interest Council, and a TIA staff member was the ANSI delegate to an ISO Working Group on consumer involvement in standardization, which includes the needs for individuals with disabilities.

C. A "Manufacturer" For The Purposes of Section 255 Should Be The Entity Responsible for the Design, Development and Fabrications of Telecommunications Equipment and CPE.

TIA, in its initial comments, endorsed the FCC's proposal to define a manufacturer as a "final assembler."[57] After reviewing the comments on this issue, TIA has concluded that the proposed "final assembler" definition does not adequately track the language of Section 255, and could, in some cases, violate the FCC's stated guiding principle of holding manufacturers accountable only for those decisions over which they have direct control.[58] TIA proposes that the FCC adopt a definition of "manufacturer" that tracks the language of Section 255: a "manufacturer" is the entity responsible for the "design[], develop[ment], and fabricate[ion]" of telecommunications equipment and CPE.

As many of the comments pointed out, the FCC's proposed definition is not well-suited to address the "branding" arrangements prevalent in the telecommunications industry.[59] Under these branding arrangements, a carrier or a retailer may direct a manufacturer to place its logo on a CPE product. If a "branded" product is the subject of a complaint, the manufacturer, not the carrier or retailer, should be held accountable for answering the complaint – after all – it is the accessibility of the manufacturer's design that is being questioned. The manufacturer, not the brand named entity, has access to the information needed to respond to a complaint. Moreover, manufacturers have an interest in defending their designs because an adverse decision

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[57] NPRM ¶ 60.

[58] Id.

[59] In the NPRM, the FCC sought comment on effective ways of dealing with private brand arrangements. NPRM ¶ 61.

in response to a complaint about a branded product could have a direct or indirect impact on the viability of other similar designs used by the manufacturer.

In other circumstances, the "final assembler" approach could inappropriately hold manufacturers responsible for design and development decisions that they did not make. Manufacturers occasionally build products according to specifications provided by another entity (such as a carrier or retailer). Since everyone agrees that access is most effectively incorporated early in the design process, the entity responsible for the product design should be held responsible, not the manufacturer, who in this situation does little more than assemble the product pursuant to the direction of the product designer.[60] In situations where the allocation of responsibility for product design and development is less clear, the FCC should assess Section 255 compliance according to the division of responsibility for design and development provided by the contract between the manufacturer and the product designer.

V. READILY ACHIEVABLE.

A. Manufacturers Should Not Be Required To Include "Readily Achievable" Access Features After A Product Has Been Introduced Into The Market.

1. In order to maximize the impact of resources available to provide access, the FCC should adopt a bright-line policy that Section 255 does not require manufacturers to modify products that have already been introduced to the market.

TIA supports the FCC's tentative conclusion that "once a product is introduced in the market without features that were not readily achievable at the time, Section 255 does not

[60] Since the retailer would be the "manufacturer" in a build-to-specifications situation, the retailer would be required to maintain a point of contact under the FCC's proposal.

require that the product be modified to incorporate subsequent, readily achievable access features."[61] The FCC should adopt this proposal in its final rules because it ensures that the resources available to provide access within the limits of the "readily achievable" standard will be spent as efficiently as possible, thereby maximizing the potential to realize concrete gains in accessibility.

As the TAAC,[62] the Access Board,[63] the FCC,[64] and many commentors representing both the disability community and industry have recognized,[65] access features can most easily and inexpensively be incorporated if considered at the outset of the product and design and development process pursuant to the direction of the product designer. As a result, there is a consensus that features that promote access considered early in this process are more likely to be "readily achievable" and therefore required than those considered later (through no fault of the manufacturer). In the NPRM, the FCC correctly recognizes that what is "readily achievable" is likely to change over time as technology and understanding of access issues and solutions advance.[66] Where new access features become available, the FCC should, as it proposes, "take into account reasonable periods of time required to incorporate new accessibility

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[61] NPRM ¶ 120.

[62] TAAC Final Report § 4.1.

[63] Access Board Guidelines § 1193.23.

[64] NPRM ¶ 120.

[65] See, e.g., CEMA Comments at 14; SBC Comments at 12; TDI Comments at 12; Trace Research and Development Center ("Trace") Comments at 7.

[66] NPRM ¶ 120.

solutions into products under development."[67] What is "reasonable" will depend largely upon how far along a product is in the product development process.

TIA would urge the FCC to interpret this "reasonableness" criteria in a way that does not delay product time to market. If a manufacturer cannot rely upon its design being "fixed" at some point far in advance of its introduction in the market, such delays will result. Long before a product is introduced, for example, a manufacturer must design and possibly purchase or reprogram the equipment required for the assembly line to make the product. Manufacturers devote substantial time and effort to design their assembly lines to incorporate components in the most efficient, reliable, and cost-effective manner possible. Inclusion of a new or different feature could require significant difficulty and expense in redesigning the assembly line, which would make the feature not "readily achievable" and therefore, not required. The FCC must be sensitive to these difficulties and expenses which increase the farther along a product is in the design and development process.[68]

Moreover, the short product life cycle of CPE products in particular weighs in favor of the FCC adopting a predominantly forward-looking approach in assessing what is "readily achievable." In the CPE marketplace, product life cycles have become extremely short, typically 12-24 months, and are pressing toward the shorter cycle on average. As a result, there will almost always be a product in the design process available to include the access feature, if "readily achievable." By requiring inclusion of the access feature early in the design process, the

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[67] Id.

[68] Similarly, the difficulty and expense of retooling and/or reconfiguring of an assembly line that would be required to include a new access feature in a product that is already in production would almost always exceed the "readily achievable" threshold.

FCC will minimize the cost of including that feature and thereby, leave more of the limited resources available for the manufacturer to incorporate other access features, if "readily achievable."

Once a product has been introduced to market, the FCC should adopt the proposed bright-line rule that it is no longer "reasonable" to require manufacturers to consider new access features that have become "readily achievable." Any other rule would be inefficient and contrary to the goal of increased accessibility for consumers with disabilities in the long run.

2. Similarly, the FCC should not require retrofitting of products as a penalty for noncompliance with Section 255.

For the same reasons that the FCC should not require manufacturers to incorporate new access features into products that have already been introduced to market, the FCC should not require manufacturers to retrofit products as a penalty for violations of Section 255. TIA, like many of the disability advocates who support retrofitting as a penalty, considers violations of Section 255 to be a serious matter. As manufacturers who intend to comply with Section 255's requirements in good faith, TIA's member companies believe that violators, particularly willful violators of Section 255 should be penalized. After all, those violators have gained an unfair competitive advantage over compliant companies by failing to incur the difficulty and expense of doing what is readily achievable to provide access.

TIA opposes retrofitting as a penalty because it will yield fewer gains in accessibility than forward looking remedies. Interference with the ordinary life cycle of a product, which is what retrofitting is, will be more likely to delay all products to market, including newer products with improved benefits. Depending on when a complaint is filed, a

CPE product will frequently be out of production or near the end of its life cycle by the time that the FCC resolves a complaint. A manufacturer should not be required to reinitiate manufacture of the product or to extend its life cycle in order to implement a retrofit. Retrofits also often involved "add-ons" which have less appeal for people with disabilities especially when new product generations will soon be on the market. Furthermore, near the end of a product life cycle, the product is not likely to be something that consumers, including persons with disabilities, want; they will want newer versions of the product or entirely new products.

Most importantly, the ultimate goal of increased accessibility would be better furthered by the FCC requiring a manufacturer to incorporate additional access features in a future product that has not yet been released, than to require retrofitting. For the same penalty, in terms of compliance cost, the FCC could generate more access gains by realizing the efficiencies gained if access features are considered early in the design and development process.

B. Readily Achievable Factors.

In opening comments, TIA supported the FCC's proposal to adapt the definition of "readily achievable," incorporated from the ADA, to the telecommunications context. TIA endorsed the three factors proposed by the FCC for evaluation of "readily achievable:" (1) feasibility, (2) expense, and (3) practicality. However, TIA asked the FCC to recognize a n additional factor: "fundamental alteration."

1. Commentors agreed that technical feasibility is an important part of the "readily achievable" determination.

A number of commentors joined TIA in agreement with the FCC that technical feasibility is an essential consideration in the "readily achievable" determination. This consensus was found among members of the disability community as well as industry. The comments voiced recognition that technical feasibility is an issue of special importance in the telecommunications industry. GTE, for example, noted: "technical barriers to accessibility will obviously present some of the most significant challenges to service providers and manufacturers."[69]

Given the importance of technical feasibility in the telecommunications industry, the FCC should recognize it in adapting the definition of "readily achievable" to the telecommunications context. As stated by the Missouri Assistive Technology Council and Project:

> [T]echnical access, unlike most facility access, can be significantly influenced by what is technically feasible. Thus a consideration of technical feasibility and the impact of an accessibility feature on the overall design and function of a product or service is an appropriate part of the determination of readily achievable.[70]

With this broad support from commentors, the FCC should maintain its emphasis on technical feasibility in the "readily achievable" determination.

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[69] GTE Comments at 7.

[70] MATP Comments at 3.

2. The FCC should recognize that "expense" requires considering the entire product which includes cumulative costs.

TIA submitted in the initial comments that the FCC should consider the cumulative costs of accessibility features as part of the "readily achievable" determination. Such consideration is supported by the Department of Justice's interpretation of the requirements of the ADA. TIA pointed out that "costs" include not only money, but the battery life, size of a product, and memory that are affected by a manufacturer's choice of accessibility features.

There was not much discussion of cumulative costs in the comments. TIA nevertheless reiterates its belief that consideration of cumulative costs is appropriate and necessary to the determination of whether incorporation of a particular feature is "readily achievable." TIA believes that requiring manufacturers to evaluate the cost of each particular accessibility feature without reference to the costs of other features already incorporated is unrealistic and would downplay the overall costs of compliance with Section 255. The entire product should be considered when determining costs. Such an approach would be, in TIA's view, tantamount to disregarding cost as a factor altogether. TIA does not believe that Congress, or the FCC, intended such a result. TIA therefore asks the FCC to recognize that cumulative costs for the entire product must be considered in the "readily achievable" determination.

3. The FCC should not require manufacturers to incorporate accessibility features if the product would be fundamentally altered.

TIA in opening comments urged the FCC to recognize that what is "readily achievable" is limited by the concept of "fundamental alteration," adapted from the ADA